

Appl. No. 10/518,253

Final Amendment and/or Response

Reply to final Office action of 3 September 2008

RECEIVED Reply under 37 CFR 1.116
CENTRAL FAX CENTER Expedited Procedure - TC 2624

Page 2 of 7

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Amendments to the Claims:

A listing of the entire set of pending claims (including amendments to the claims, if any) is submitted herewith per 37 CFR 1.121. This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Previously presented) A method of processing data corresponding to pixels of a sequence of digital images so as to detect a grid corresponding to blocking artifacts, comprising:

high-pass filtering a portion of a digital image to supply at least one set of discontinuity pixels,

detecting blocking artifacts from the at least one set of discontinuity pixels, and
searching rows within the portion for a grid row having a density of blocking artifacts that is substantially larger than that of its neighboring rows.

2. (Previously presented) The method of claim 1, wherein the searching includes:
selecting, in a row of the portion of the image, segments comprising a number of consecutive blocking artifacts that is larger than a predetermined first threshold;
computing a blocking artifact level per row on the basis of values of pixels of the selected segments; and
determining the grid row based on a comparison of the blocking artifact levels of a current row and a set of neighboring rows.

3. (Previously presented) The method of claim 2, including measuring the image quality by adding the blocking artifact levels of the different rows of the grid for the portion of the image.

4. (Currently amended) The method of claim 4_2, including validating to determine whether a grid is present within the portion of the digital image if the number of grid rows found in said portion is higher than a second predetermined threshold.

Appl. No. 10/518,253
Final Amendment and/or Response
Reply to final Office action of 3 September 2008

Reply under 37 CFR 1.116
Expedited Procedure – TC 2624
Page 3 of 7

5. (Previously presented) The method of claim 1, wherein the high-pass filtering supplies two sets of discontinuity pixels, one horizontal set and one vertical set.
6. (Previously presented) The method of claim 1, wherein detecting the blocking artifacts includes detecting a first type of blocking artifacts and a second type of blocking artifacts from the at least one set of discontinuity pixels.
7. (Previously presented) The method of claim 6, including correcting the blocking artifacts situated in the grid rows in accordance with their type.
8. (Previously presented) A television receiver comprising:
 - a screen that includes pixels arranged in rows, and
 - a processing device that is configured to:
 - high-pass filter a portion of a digital image to supply at least one set of discontinuity pixels,
 - detect blocking artifacts from the at least one set of discontinuity pixels,
 - search rows within the portion for a grid row having a density of blocking artifacts that is substantially larger than that of its neighboring rows,
 - correct the blocking artifacts situated in the grid row to provide a corrected digital image, and
 - display corrected digital images on the screen.
9. (Currently amended) A computer-readable medium that includes a program product comprising a set of instructions which, when loaded into a circuit, cause said circuit to perform the method of processing digital images as claimed in claim 1.
10. (Previously presented) The receiver of claim 8, wherein the processor is configured to detect a first type of blocking artifact and a second type of blocking artifact from the at least one set of discontinuity pixels.

Appl. No. 10/518,253
Final Amendment and/or Response
Reply to final Office action of 3 September 2008

Reply under 37 CFR 1.116
Expedited Procedure – TC 2624
Page 4 of 7

11. (Previously presented) The receiver of claim 10, wherein the processor is configured to correct the blocking artifacts situated in the grid rows based on the type of blocking artifact.

12. (Previously presented) The receiver of claim 8, wherein the processing device is configured to:

select, in a row of the portion of the image, segments comprising a number of consecutive blocking artifacts that is larger than a predetermined first threshold;

compute a blocking artifact level per row based on values of pixels of the selected segments; and

determine the grid row based on a comparison of the blocking artifact levels of a current row and a set of neighboring rows.

13. (Previously presented) The receiver of claim 8, including a validation system that is configured to validate a presence of the grid row by comparing a total number of grid rows found to a threshold value.

14. (Previously presented) The receiver of claim 8, wherein the processing device includes:

a plurality of discrete cosine transforms that are arranged to identify one or more frequency limits associated with the grid row, and

a correction unit that is configured to substantially reduce elements of the digital image that exceed these one or more frequency limits to form the corrected digital image.

Appl. No. 10/518,253
Final Amendment and/or Response
Reply to final Office action of 3 September 2008

Reply under 37 CFR 1.116
Expedited Procedure – TC 2624

Page 5 of 7

15. (Previously presented) A display system comprising:

- a display screen that includes pixels arranged in rows,
- a high-pass filter that is configured to filter a portion of a digital image to supply at least one set of discontinuity pixels,
- a detector that is configured to search rows within the portion for a grid row having a density of blocking artifacts that is substantially larger than that of its neighboring rows, and
- a correction system that is configured to correct the blocking artifacts situated in the grid row to provide a corrected digital image for display on the display screen.

16. (Previously presented) The system of claim 15, wherein the detector is configured to:

- select, in a row of the portion of the image, segments comprising a number of consecutive blocking artifacts that is larger than a predetermined first threshold;
- compute a blocking artifact level per row based on values of pixels of the selected segments; and
- determine the grid row based on a comparison of the blocking artifact levels of a current row and a set of neighboring rows.

17. (Previously presented) The system of claim 16, including a validation system that is configured to validate a presence of the grid row by comparing a total number of grid rows found to a threshold value.

18. (Previously presented) The system of claim 15, including a validation system that is configured to validate a presence of the grid row by comparing a total number of grid rows found to a threshold value.

Appl. No. 10/518,253
Final Amendment and/or Response
Reply to final Office action of 3 September 2008

Reply under 37 CFR 1.116
Expedited Procedure – TC 2624
Page 6 of 7

19. (Previously presented) The system of claim 15, wherein the correction system includes:

a plurality of discrete cosine transforms that are arranged to identify one or more frequency limits associated with the grid row, and

a correction unit that is configured to substantially reduce elements of the digital image that exceed these one or more frequency limits.

20. (Previously presented) The system of claim 19, wherein the correction unit includes:

a filter that is configured to substantially eliminate components of an output of at least one of the discrete cosine transforms corresponding to frequencies above the one or more frequency limits to form a filtered transform, and

an inverse discrete cosine transform that is configured to convert the filtered transform into at least a portion of the corrected digital image.